

CLAIMS

1. A treatment apparatus comprising:

a vessel made of a microwave-reflecting material, and having a first end and a window or an opening portion for emitting microwaves into the vessel;

5 a first filter located so as to partition the vessel, and configured to separate solids that are to be separated, from contents held in the vessel; and

a first reflecting member located closer to the first end than a position of the opening portion is and so as to partition the vessel, the first reflective member partitioning a space in the vessel to suppress microwave irradiation by reflecting microwave to the opposite
10 side of the first end with respect to the first filter, and configured to allow at least one of the contents having passed through the first filter to pass through the first reflecting member or allow the at least one of the contents having passed through the first reflecting member to pass through the first filter, and to reflect the microwaves,

wherein the first reflecting member has one or more holes or opening portions
15 through which the at least one of contents pass, wherein a diameter of each hole or opening portion is smaller than a half-wavelength of the microwaves.

2. The treatment apparatus according to claim 1, wherein the first reflecting member is located closer to the first end than the first filter is, or between the first filter and the opening
20 portion.

3. The treatment apparatus according to claim 1, wherein the first filter and the first reflecting member are laid over each other.

25 4. The treatment apparatus according to claim 1, wherein the first reflecting member is located between the first filter and the opening portion, and configured to allow the solid to pass through the first reflecting member.

30 5. The treatment apparatus according to claim 1, wherein the first filter and the first reflecting member together configure a first reflecting filter that separates solids that are to be separated, from contents of the vessel, and that reflects microwaves.

6. The treatment apparatus according to claim 1,
wherein the vessel further has a second end,
the opening portion is provided between the first end and the second end of the
5 vessel, and
the treatment apparatus further comprises:
a second filter located closer to the second end than the first filter
and the first reflecting member are and so as to partition the vessel, and configured to separate
solids that are to be separated, from contents of the vessel; and
10 a second reflecting member located closer to the second end than
the first filter and the opening portion are and so as to partition the vessel, and configured to
allow at least contents having passed through the second filter to pass through the second
reflecting member, and to reflect microwaves.
- 15 7. The treatment apparatus according to claim 6, wherein the second reflecting
member is located closer to the second end than the second filter is, or between the second filter
and the opening portion.
- 20 8. The treatment apparatus according to claim 6, wherein the second filter is laid
over the second reflecting member.
- 25 9. The treatment apparatus according to claim 6, wherein the second reflecting
member is located between the second filter and the opening portion, and configured to allow the
solid to pass through the second reflecting member.
10. The treatment apparatus according to claim 6, wherein the second filter and the
second reflecting member together configure a second reflecting filter that separates solids that
are to be separated, from contents of the vessel, and that reflects microwaves.

11. The treatment apparatus according to claim 1, wherein, in the vessel, a first opening portion through which at least one of supply and discharge of contents is performed is located closer to the first end than the first filter and the first reflecting member are.

5 12. The treatment apparatus according to claim 6, wherein, in the vessel, a first opening portion through which at least one of supply and discharge of contents is performed is located closer to the first end than the first filter and the first reflecting member are, and a second opening portion through which at least one of supply and discharge of contents is performed is located closer to the second end than the second filter and the second reflecting member are.

10 13. The treatment apparatus according to claim 11,
wherein the first end is a lower end of the vessel, and the first opening portion is a discharge port for discharging contents.

15 14. The treatment apparatus according to claim 12, wherein microwave irradiation from the opening portion is performed between the first opening portion and the second opening portion in a state in which contents flow inside the vessel.

20 15. The treatment apparatus according to claim 12, for performing:
treatment that is performed inside the vessel while supplying contents from the first opening portion and discharging the contents from the second opening portion; and
treatment that is performed inside the vessel while supplying contents from the second opening portion and discharging the contents from the first opening portion.

25 16. The treatment apparatus according to claim 6,
wherein the vessel is a cylindrical member having a first end that is open and a second end that is open,
the opening portion of the vessel is provided on a side face of the cylindrical member,
30 the first filter is located so as to obstruct a first end side of the cylindrical member,

the first reflecting member is located so as to obstruct a first end side of the cylindrical member,

the second filter is located so as to obstruct a second end side of the cylindrical member, and

5 the second reflecting member is located so as to obstruct a second end side of the cylindrical member.

17. The treatment apparatus according to claim 16, wherein the treatment apparatus is a column.

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18. The treatment apparatus according to claim 1,
wherein the treatment apparatus is a treatment apparatus used for solid-phase synthesis, and
the solid is a solid-phase synthesis carrier used for solid-phase synthesis.

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19. The treatment apparatus according to claim 18, wherein the solid-phase synthesis is solid-phase synthesis for synthesizing a peptide or a nucleotide chain bound to a solid-phase synthesis carrier.

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20. The treatment apparatus according to claim 1, wherein the treatment apparatus is a treatment apparatus in which microwave irradiation is performed in a multi-mode.

21. The treatment apparatus according to claim 1, wherein the treatment apparatus further includes an irradiation unit configured to perform microwave irradiation from the opening portion into the vessel.

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